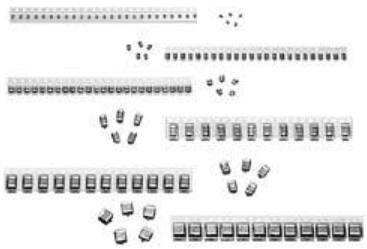
Solid Tantalum Chip Capacitors
TANTAMOUNT® Conformal Coated, Maximum CV



FEATURES

- Large capacitance rating range
- Terminations: Tin (2) standard
- 8 mm, 12 mm tape and reel packaging available per EIA 481-1 and reeling per IEC 286-3. 7" [178 mm] standard. 13" [330 mm] available.
- Case code compatibility with EIA 535BAAC and CECC30801 molded chips

Pb-free Available
RoHS* COMPLIANT

PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55 °C to + 85 °C
(To + 125 °C with voltage derating)
Note: Refer to Doc. 40088

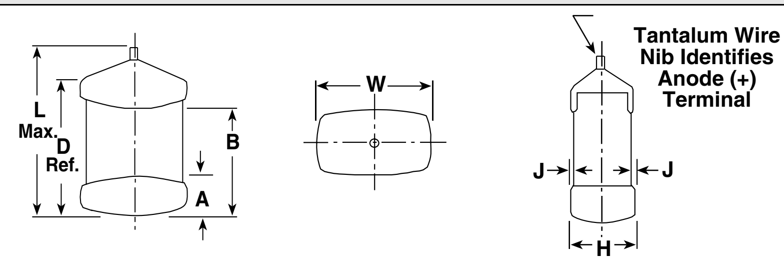
Capacitance Range: 0.1 µF to 1500 µF
Capacitance Tolerance: ± 10 %, ± 20 % standard
Voltage Rating: 4 WVDC to 50 WVDC

ORDERING INFORMATION

595D	106	X0	010	A	2	T
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING AT + 85 °C	CASE CODE	TERMINATION	PACKAGING
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	**X0 = ± 20 %** X9 = ± 10 %	This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 volts).	See Ratings and Case Codes Table	**2 = 100 % Tin** 4 = Gold Plated 8 = Solder Plated (60/40) Special Order	**T = Tape and Reel 7" [178 mm] Reel** W = 13" [330 mm] Reel See Tape and Reel Specifications.

Note: Preferred Tolerance and reel sizes are in bold.
We reserve the right to supply higher voltage ratings and tighter capacitance tolerance capacitors in the same case size.
Voltage substitutions will be marked with the higher voltage rating.

DIMENSIONS in inches [millimeters]



CASE CODE	L (Max.)	W	H	A	B	D (REF.)	J (MAX.)
T	0.087 [2.2]	0.045 ± 0.012 [1.1 ± 0.3]	0.045 ± 0.012 [1.1 ± 0.3]	0.016 ± 0.008 [0.4 ± 0.2]	0.042 ± 0.010 [1.07 ± 0.25]	0.063 [1.6]	0.004 [0.1]
S	0.126 ± 0.008 [3.2 ± 0.2]	0.067 ± 0.008 [1.7 ± 0.2]	0.051 ± 0.008 [1.3 ± 0.2]	0.031 ± 0.012 [0.80 ± 0.30]	0.078 ± 0.012 [2.0 ± 0.3]	0.086 [2.2]	0.004 [0.1]
A	0.146 [3.7]	0.072 ± 0.012 [1.8 ± 0.3]	0.056 ± 0.012 [1.4 ± 0.3]	0.031 ± 0.012 [0.80 ± 0.30]	0.085 ± 0.016 [2.2 ± 0.4]	0.115 [2.9]	0.004 [0.1]
B	0.158 [4.0]	0.110 + 0.012 - 0.016 [2.8 + 0.3 - 0.4]	0.075 + 0.012 - 0.024 [1.9 + 0.3 - 0.6]	0.031 ± 0.012 [0.80 ± 0.30]	0.097 ± 0.016 [2.5 ± 0.4]	0.138 [3.5]	0.004 [0.1]
C	0.281 [7.1]	0.126 ± 0.012 [3.2 ± 0.3]	0.098 ± 0.012 [2.5 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.30]	0.180 ± 0.024 [4.6 ± 0.6]	0.236 [6.0]	0.004 [0.1]
G	0.205 ± 0.016 [5.2 ± 0.4]	0.144 ± 0.016 [3.65 ± 0.4]	0.087 [2.2] Max	0.051 ± 0.012 [1.3 ± 0.3]	0.133 ± 0.016 [3.4 ± 0.4]	0.173 [4.4]	0.004 [0.1]
H	0.205 ± 0.016 [5.2 ± 0.4]	0.181 ± 0.016 [4.6 ± 0.4]	0.078 [2.0] Max	0.051 ± 0.012 [1.3 ± 0.30]	0.133 ± 0.016 [3.4 ± 0.4]	0.173 [4.4]	0.004 [0.1]
D	0.293 [7.5]	0.170 ± 0.012 [4.3 ± 0.3]	0.110 ± 0.012 [2.8 ± 0.3]	0.051 ± 0.012 [1.3 ± 0.30]	0.180 ± 0.024 [4.6 ± 0.6]	0.253 [6.4]	0.004 [0.1]
M	0.129 ± 0.012 [3.3 ± 0.3]	0.106 ± 0.012 [2.7 ± 0.3]	0.067 ± 0.012 [1.7 ± 0.3]	0.031 ± 0.012 [0.80 ± 0.3]	0.078 ± 0.012 [2.0 ± 0.3]	0.095 [2.5]	0.004 [0.1]
R	0.283 [7.2]	0.235 ± 0.012 [6.0 ± 0.3]	0.136 ± 0.012 [3.5 ± 0.3]	0.051 ± 0.012 [1.3 ± .30]	0.180 ± 0.024 [4.6 ± 0.6]	0.243 [6.2]	0.004 [0.1]

Note: The anode termination (D less B) will be a minimum of 0.010" (0.3 mm). T Case = 0.005" (0.13 mm) minimum.
* Pb containing terminations are not RoHS compliant, exemptions may apply

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RATINGS AND CASE CODES

µF	4 V	6.3 V	10 V	16 V	20 V	25 V	35 V	50 V
0.10								T
0.15								T
0.22								T
0.33							T	A
0.47						T	A	A
0.68					T		A	A/B
1.0					T	A	A	B
1.5				T		A	A/B	C
2.2			T	T/A	A	A	B	B/C
3.3		T		T	A	B/C	C	C
4.7	T		T	A	A/B		B/C	C
6.8		T		A	A/B	B	C	C/D
10	T		A	A/B	B	B/C	D	D/R
15	A	A	A/B	A/B	B	C	C/D	R
22		A/B	A	B/M	B/C	C/D	D/R	R
33	A/B	S/A/B	A/B	B/C		C/D	R	
47	A	A/B	B	B/C	C/D	D/R	R	
68	A	A/B	B/C	C/D	D	D/R		
100	A/B	B/C/M	B/D	C/D	D/R	R		
120	C	C	D	R	R			
150	B/C		C/D	D/R	R			
180	D	D	D/R	R				
220	C/D	C/D/G/H	C/D/R	R				
270	C/D		R					
330	C*	C/D/R	D/R	R				
390	D	R	R					
470	C/R	D/R	R					
560		R						
680	D	R	R					
1000	R	R						
1500	R							

* Preliminary values, contact factory for availability

STANDARD/EXTENDED RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
4 WVDC AT+ 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V						
4.7	T	595D475X_004T2T	0.5	6	7.8	0.06
10	T	595D106X_004T2T	0.5	6	7.8	0.06
15	A	595D156X_004A2T	0.6	6	1.4	0.23
33	A	595D336X_004A2T	1.3	6	1.4	0.23
33	B	595D336X_004B2T	1.3	6	0.47	0.43
47	A	595D476X_004A2T	1.9	6	1.40	0.23
68	A	595D686X_004A2T	2.7	6	1.30	0.24
100	A	595D107X_004A2T	4.0	12	0.60	0.35
100	B	595D107X_004B2T	4.0	8	0.45	0.44
120	C	595D127X_004C2T	4.8	8	0.19	0.76

* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

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STANDARD/EXTENDED RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
4 WVDC AT + 85 °C, SURGE = 5.2 V . . . 2.7 WVDC AT + 125 °C, SURGE = 3.4 V						
150	B	595D157X_004B2T	6.0	8	0.45	0.44
150	C	595D157X_004C2T	6.0	8	0.18	0.78
180	D	595D187X_004D2T	7.2	8	0.14	1.04
220	C	595D227X_004C2T	8.8	8	0.18	0.78
220	D	595D227X_004D2T	8.8	8	0.14	1.04
270	C	595D277X_004C2T	10.8	8	0.17	0.80
270	D	595D277X_004D2T	10.8	8	0.13	1.07
330*	C*	595D337X_004C2T*	13.2*	8*	0.17*	0.80*
390	D	595D397X_004D2T	15.6	8	0.13	1.07
470	C	595D477X_004C2T	18.8	10	0.16	0.83
470	R	595D477X_004R2T	18.8	10	0.13	1.39
680	D	595D687X_004D2T	27.2	12	0.13	1.07
1000	R	595D108X_004R2T	40.0	16	0.07	1.88
1500	R	595D158X_004R2T	60.0	20	0.07	1.88
6.3 WVDC AT + 85 °C, SURGE = 8 V . . . 4 WVDC AT + 125 °C, SURGE = 5 V						
3.3	T	595D335X_6R3T2T	0.5	6	8.5	0.06
6.8	T	595D685X_6R3T2T	0.5	6	8.5	0.06
15	A	595D156X_6R3A2T	0.9	6	1.7	0.20
22	A	595D226X_6R3A2T	1.4	6	1.7	0.20
22	B	595D226X_6R3B2T	1.4	6	0.57	0.37
33	A	595D336X_6R3A2T	2.1	6	1.70	0.20
33	B	595D336X_6R3B2T	1.7	5	0.57	0.39
33	S	595D336X_6R3S2T	2.1	8	1.30	0.20
47	A	595D476X_6R3A2T	2.8	6	1.50	0.22
47	B	595D336X_6R3B2T	2.4	5	0.57	0.39
68	A	595D686X_6R3A2T	4.3	12	0.5	0.19
68	B	595D686X_6R3B2T	4.3	6	0.55	0.38
100	B	595D107X_6R3B2T	6.3	8	0.55	0.39
100	C	595D107X_6R3C2T	6.3	8	0.20	0.74
100	M	595D107X_6R3M2T	6.3	14	0.40	0.49
120	C	595D127X_6R3C2T	7.6	8	0.19	0.76
180	D	595D187X_6R3D2T	11.3	8	0.14	1.04
220	C	595D227X_6R3C2T	13.9	8	0.18	0.78
220	D	595D227X_6R3D2T	13.9	8	0.14	1.04
220	G	595D227X_6R3G2T	13.9	8	0.18	0.75
220	H	595D227X_6R3H2T	13.9	8	0.18	0.75
330	C	595D337X_6R3C2T	20.8	8	0.17	0.80
330	C	595D337X_6W3C2T	20.8	8	0.17	0.80
330	D	595D337X_6R3D2T	20.8	8	0.14	1.04
330	R	595D337X_6R3R2T	20.8	8	0.13	1.39
390	R	595D397X_6R3R2T	24.6	8	0.13	1.39
470	D	595D477X_6R3D2T	29.6	8	0.13	1.07
470	D	595D477X_6W3D2T	29.6	10	0.12	1.44
470	R	595D477X_6R3R2T	29.6	10	0.12	1.44
560	R	595D567X_6R3R2T	35.3	10	0.11	1.51
680	R	595D687X_6R3R2T	42.8	10	0.09	1.66
680	R	595D687X_6W3R2T	42.8	10	0.09	1.66
1000	R	595D108X_6R3R2T	63.0	16	0.07	1.88
1000	R	595D108X_6W3R2T	63.0	16	0.07	1.88

* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

STANDARD/EXTENDED RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
10 WVDC AT + 85 °C, SURGE = 13 V . . . 7 WVDC AT + 125 °C, SURGE = 8 V						
2.2	T	595D225X_010T2T	0.5	6	8.6	0.06
4.7	T	595D475X_010T2T	0.5	6	8.6	0.06
10	A	595D106X_010A2T	1.0	6	1.9	0.19
15	A	595D156X_010A2T	1.5	6	1.8	0.20
15	B	595D156X_010B2T	1.5	6	0.67	0.35
22	A	595D226X_010A2T	2.2	6	1.80	0.20
33	A	595D336X_010A2T	3.3	8	3.0	0.16
33	B	595D336X_010B2T	3.3	6	1.90	0.21
47	B	595D476X_010B2T	4.7	6	0.65	0.35
68	B	595D686X_010B2T	6.8	6	0.65	0.36
68	C	595D686X_010C2T	6.8	6	0.24	0.68
100	B	595D107X_010B2T	10.0	12	0.4	0.46
100	D	595D107X_010D2T	8.0	7	0.15	1.00
120	D	595D127X_010D2T	12.0	8	0.14	1.04
150	C	595D157X_010C2T	15.0	8	0.22	0.71
150	D	595D157X_010D2T	15.0	8	0.14	1.04
180	D	595D187X_010D2T	18.0	8	0.38	0.63
180	R	595D187X_010R2T	18.0	8	0.13	1.39
220	C	595D227X_010C2T	22.0	8	0.20	0.74
220	D	595D227X_010D2T	22.0	8	0.14	1.04
220	R	595D227X_010R2T	22.0	8	0.13	1.39
270	R	595D277X_010R2T	27.0	8	0.13	1.39
330	D	595D337X_010D2T	33.0	8	0.14	1.04
330	R	595D337X_010R2T	33.0	8	0.13	1.39
390	R	595D397X_010R2T	39.0	8	0.12	1.44
470	R	595D477X_010R2T	47.0	8	0.12	1.44
680	R	595D687X_010R2T	68.0	14	0.09	1.66
16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V						
1.5	T	595D155X_016T2T	0.5	6	8.7	0.06
2.2	T	595D225X_016T2T	0.5	6	8.7	0.06
2.2	A	595D225X_010D2T	0.4	5	3.9	0.14
3.3	T	595D335X_016T2T	0.5	6	8.6	0.06
4.7	A	595D475X_016A2T	0.8	6	2.9	0.16
6.8	A	595D685X_016A2T	1.1	6	2.8	0.16
10	A	595D106X_016A2T	1.6	6	2.5	0.17
10	B	595D106X_016B2T	1.6	6	0.76	0.32
15	A	595D156X_016A2T	2.4	6	2.40	0.17
15	B	595D156X_016B2T	2.4	6	0.75	0.33
22	B	595D226X_016B2T	3.5	6	0.75	0.32
22	M	595D226X_016M2T	3.5	6	0.50	0.44
33	B	595D336X_016B2T	5.3	6	0.72	0.33
33	C	595D336X_016C2T	5.3	6	0.29	0.62
47	B	595D476X_016B2T	7.5	6	0.72	0.33
47	C	595D476X_016C2T	7.5	6	0.28	0.63
68	C	595D686X_016C2T	10.9	6	0.26	0.64
68	D	595D686X_016D2T	10.9	6	0.14	1.04
100	C	595D107X_016C2T	16.0	8	0.27	0.64

* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

STANDARD/EXTENDED RATINGS

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
16 WVDC AT + 85 °C, SURGE = 20 V . . . 10 WVDC AT + 125 °C, SURGE = 12 V						
100	D	595D107X_016D2T	16.0	8	0.14	1.04
120	R	595D127X_016R2T	19.2	8	0.14	1.34
150	D	595D157X_016D2T	24.0	8	0.14	1.04
150	R	595D157X_016R2T	24.0	8	0.13	1.39
180	R	595D187X_016R2T	28.8	8	0.13	1.39
220	R	595D227X_016R2T	35.2	8	0.12	1.44
330	R	595D337X_016R2T	52.8	14	0.11	1.51
20 WVDC AT + 85 °C, SURGE = 26 V . . . 13 WVDC AT + 125 °C, SURGE = 16 V						
0.68	T	595D684X_020T2T	0.5	4	10.8	0.05
1.0	T	595D105X_020T2T	0.5	4	9.0	0.06
2.2	A	595D225X_020A2T	0.5	6	3.8	0.14
3.3	A	595D335X_020A2T	0.7	6	3.8	0.14
4.7	A	595D475X_020A2T	0.9	6	3.1	0.15
4.7	B	595D475X_020B2T	0.9	6	0.95	0.29
6.8	A	595D685X_020A2T	1.4	6	3.0	0.15
6.8	B	595D685X_020B2T	1.4	6	0.95	0.29
10	B	595D106X_020B2T	2.0	6	1.0	0.28
15	B	595D156X_020B2T	3.0	6	1.0	0.28
22	B	595D226X_020B2T	4.4	6	0.90	0.31
22	C	595D226X_020C2T	4.4	6	0.38	0.54
47	C	595D476X_020C2T	9.4	6	0.35	0.56
47	D	595D476X_020D2T	9.4	6	0.19	0.89
68	D	595D686X_020D2T	12.2	6	0.19	0.89
100	D	595D107X_020D2T	20.0	8	0.18	0.91
100	R	595D107X_020R2T	20.0	8	0.14	1.34
120	R	595D127X_020R2T	24.0	8	0.14	1.34
150	R	595D157X_020R2T	30.0	8	0.14	1.34
25 WVDC AT + 85 °C, SURGE = 32 V . . . 17 WVDC AT + 125 °C, SURGE = 20 V						
0.47	T	595D474X_025T2T	0.5	4	13.5	0.05
1	A	595D105X_025A2T	0.4	4	4.2	0.13
1.5	A	595D155X_025A2T	0.5	6	3.8	0.14
2.2	A	595D225X_025A2T	0.6	6	3.8	0.14
3.3	B	595D335X_025B2T	0.8	6	1.9	0.21
4.7	C	595D475X_025C2T	1.3	5	0.68	0.40
6.8	B	595D685X_025B2T	1.7	6	1.5	0.23
10	B	595D106X_025B2T	2.5	6	1.5	0.23
10	C	595D106X_025C2T	2.5	6	0.57	0.44
15	C	595D156X_025C2T	3.8	6	0.56	0.44
22	C	595D226X_025C2T	5.5	6	0.50	0.47
22	D	595D226X_025D2T	5.5	6	0.28	0.73
33	C	595D336X_025C2T	8.3	6	0.45	0.49
33	D	595D336X_025D2T	8.3	6	0.27	0.75
47	D	595D476X_025D2T	11.8	6	0.26	0.76
47	R	595D476X_025R2T	11.8	6	0.20	1.12
68	D	595D686X_025D2T	17.0	8	0.26	0.76
68	R	595D686X_025R2T	17.0	6	0.20	1.12
100	R	595D107X_025R2T	25.0	8	0.20	1.12

* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

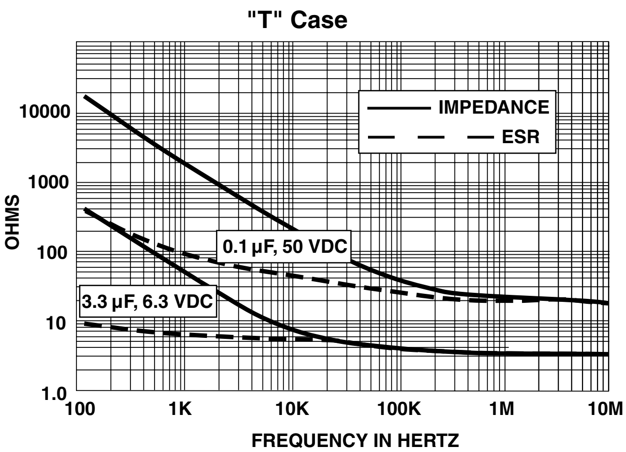
Solid Tantalum Chip Capacitors
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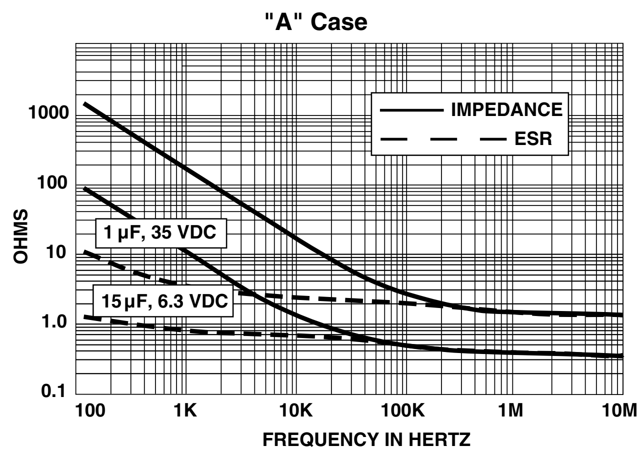
STANDARD/EXTENDED RATINGS

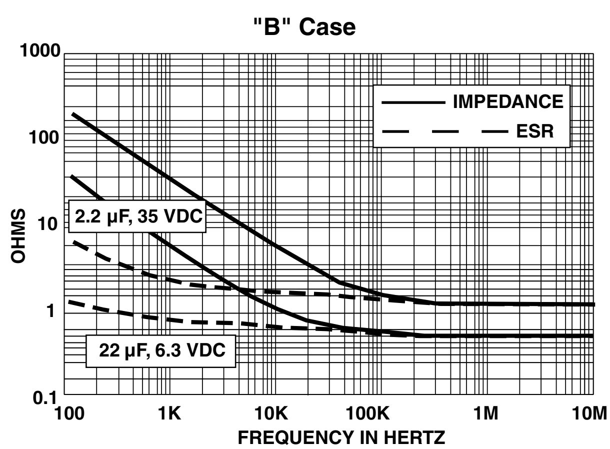
CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. DCL AT + 25 °C (µA)	MAX. DF AT + 25 °C 120 Hz (%)	MAX. ESR AT + 25 °C 100 kHz (Ohms)	MAX. RIPPLE 100 kHz Irms (Amps)
35 WVDC AT + 85 °C, SURGE = 46 V . . . 23 WVDC AT + 125 °C, SURGE = 28 V						
0.33	T	595D334X_035T2T	0.5	4	14.4	0.05
0.47	A	595D474X_035A2T	0.5	4	4.3	0.13
0.68	A	595D684X_035A2T	0.5	4	4.2	0.13
1.0	A	595D105X_035A2T	0.5	4	4.1	0.13
1.5	A	595D155X_035A2T	0.5	6	3.8	0.14
1.5	B	595D155X_035B2T	0.5	6	2.8	0.17
2.2	B	595D225X_035B2T	0.8	6	2.3	0.19
3.3	C	595D335X_035C2T	1.2	6	0.75	0.38
4.7	B	595D475X_035B2T	1.6	6	2.2	0.19
4.7	C	595D475X_035C2T	1.6	6	0.66	0.41
6.8	C	595D685X_035C2T	2.4	6	0.63	0.42
10	D	595D106X_035D2T	3.5	6	0.43	0.59
15	C	595D156X_035C2T	5.3	6	0.60	0.43
15	D	595D156X_035D2T	5.3	6	0.41	0.60
22	D	595D226X_035D2T	7.7	6	0.32	0.68
22	R	595D226X_035R2T	7.7	6	0.28	0.94
33	R	595D336X_035R2T	11.6	6	0.28	0.94
47	R	595D476X_035R2T	16.5	6	0.28	0.94
50 WVDC AT + 85 °C, SURGE = 65 V . . . 33 WVDC AT + 125 °C, SURGE = 38 V						
0.10	T	595D104X_050T2T	0.5	4	22.5	0.04
0.15	T	595D154X_050T2T	0.5	4	18.0	0.04
0.22	T	595D224X_050T2T	0.5	4	15.3	0.04
0.33	A	595D334X_050A2T	0.5	4	8.1	0.09
0.47	A	595D474X_050A2T	0.5	4	7.2	0.10
0.68	A	595D684X_050A2T	0.5	4	6.1	0.11
0.68	B	595D684X_050B2T	0.5	4	5.4	0.12
1.0	B	595D105X_050B2T	0.5	4	5.0	0.13
1.5	C	595D155X_050C2T	0.8	6	1.8	0.25
2.2	B	595D225X_050B2T	1.1	6	3.2	0.16
2.2	C	595D225X_050C2T	1.1	6	1.7	0.25
3.3	C	595D335X_050C2T	1.7	6	1.6	0.26
4.7	C	595D475X_050C2T	2.4	6	1.4	0.28
6.8	C	595D685X_050C2T	3.4	6	1.3	0.29
6.8	D	595D685X_050D2T	3.4	6	0.82	0.43
10	D	595D106X_050D2T	5.0	6	0.80	0.43
10	R	595D106X_050R2T	5.0	6	0.65	0.62
15	R	595D156X_050R2T	7.5	6	0.40	0.79
22	R	595D226X_050R2T	11.0	6	0.39	0.80

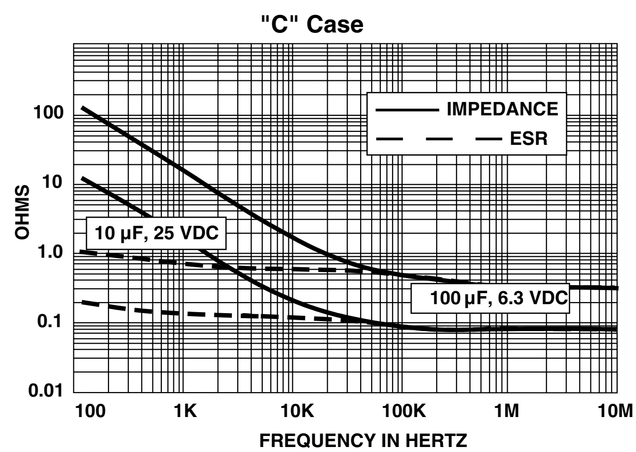
* Preliminary values, contact factory for availability. For 10 % tolerance, specify "9"; for 20 % tolerance, change to "0".

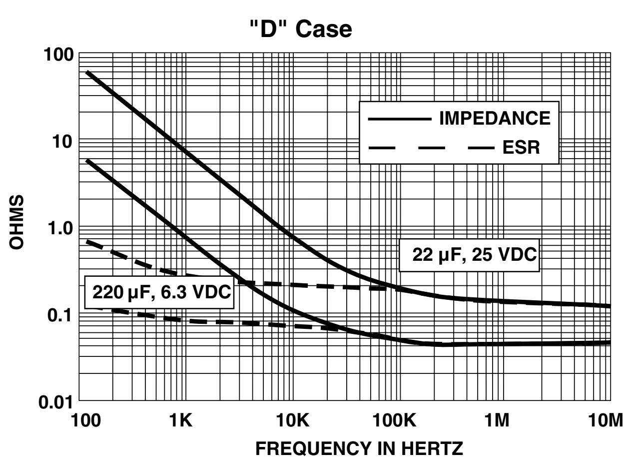
TYPICAL CURVES AT + 25 °C, IMPEDANCE AND ESR VS. FREQUENCY

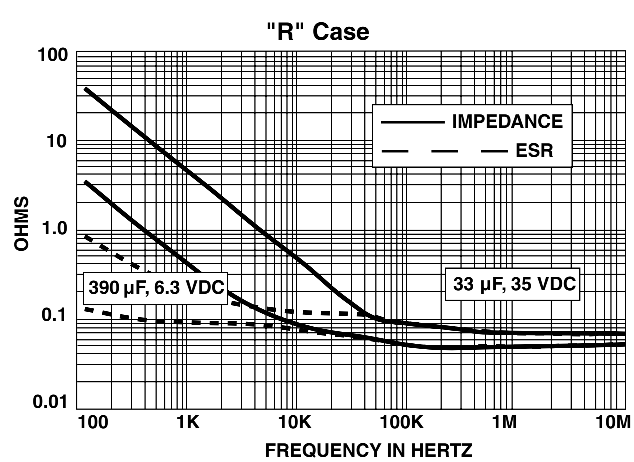












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